भारतीय मानक
Indian Standard

IS 3958 : 2021

श्रंगार सामग्रियों के नमूना लेने की पद्धतियाँ

(दूसरा पुनरीक्षण)

Methods of sampling Cosmetics

(Second Revision)

ICS 71.100.70

© BIS 2021

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली – 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002
www.bis.gov.in www.standardsbis.in

October 2021 **Price Group 7**

Cosmetics Sectional Committee, PCD 19

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Cosmetics Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

This standard was originally published in 1966 and first revised in 1984.

In the first revision, relevant drawings of equipments commonly used for sampling of products in powder form, thick and thin emulsions and homogeneous liquid forms were included and lot sizes were rationalized and brought in line with IS 2500 (Part 1) : 1973.

In this standard (second revision), definition of some terms have been added to provide more clarity to the users. Under classification of the cosmetics, aerosols have been added. Labelling requirements for the sample containers and training requirements for the sampler have been added. Requirements of sampling tools used for the sampling of the cosmetics has been elaborated and provided in annexure.

For attributes and variable testing of the finished products IS 2500 may be referred.

The composition of the Committee responsible for formulation of this standard is given at Annex B.

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’.

Indian Standard

METHODS OF SAMPLING COSMETICS

(Second Revision)

1 SCOPE

1.1 This standard prescribes methods of sampling cosmetics.

1.2 Methods of sampling of toilet soaps shall be out of scope of this standard and sampling and shall be done as per IS 286.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this draft standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
286 : 2018	Methods of sampling and test for soaps (*second revision*)
2500 (Part 1) : 2000/ ISO 2859-1 : 1999	Sampling procedures for inspection by attributes: Part 1 sampling schemes indexed by acceptance quality limit (AQL) for lot-By-Lot inspection (*third revision*)
2500 (Part 3) : 1995/ ISO 2859-2 : 1985	Sampling inspection procedures: Part 3 Attribute sampling plans indexed by limiting quality (LQ) for isolated lot inspection iso title sampling procedures for inspection by attributes

3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply.

3.1 Acceptable Quality Level (AQL) — The AQL is the quality level that is the worst tolerable process average when a continuing series of lots is submitted for acceptance sampling.

3.2 Batch — The material in a single mass obtained from the same raw materials and process of manufacture prior to packing shall be regarded as one batch. For instance, the material in a process vessel just before packing may be taken as constituting a batch.

3.3 Composite Sample — A sample prepared by mixing equal quantities of material from each of the gross samples in a lot/Batch and intended to represent fully the lot as a whole.

3.4 Cosmetics — Cosmetic means any article intended to be rubbed, poured, sprinkled or sprayed on, or introduced into, or otherwise applied to the human body or any part thereof for cleansing, beautifying, promoting attractiveness, or altering the appearance, and includes any article intended for use as a component of cosmetic.

3.5 Gross Sample — A sample prepared by mixing the part or whole of the material from some or all of the units in a package and intended to fully represent the package.

3.6 Homogeneity — A consignment is regarded as homogeneous when it is all of the same origin i.e. from the same batch/lot and intended to have uniform character and quality, within specified limits.

3.7 Individual Sample — A sample obtained from a gross sample representing a package and intended for determining the specified characteristics of the material in the package.

3.8 Item — Anything that can be described and considered separately.

3.9 Lot — In a single consignment, all the packages containing cosmetics of the same type and form, representing the same batch of manufacture, shall constitute a lot. In the case of a cosmetics produced by continuous process, it is a specific identified amount produced in a unit of time or quantity in a manner that assures its having uniform character and quality within specified limits.

3.10 Lot Number/Batch Number — Lot number, control number, or batch number means any distinctive combination of letters, numbers, or symbols, or any combination of them, from which the complete history of the manufacture, processing, packing, holding, and distribution of a batch or lot of cosmetic product or other material can be determined.

3.11 Manufacturer — The term manufacture of a cosmetic product means the making of any cosmetic product by chemical, physical, biological, or other procedures, including manipulation, sampling, testing, or control procedures applied to the product.

3.12 Sample — A portion of a material selected in such a way that it represents all the characteristics of the material from which it is taken.

3.13 Sample Size — Number of sampling units in a sample.

3.14 Sampler — Person responsible for performing the sampling operations.

3.15 Sampling Procedure — The succession of steps set out in this standard to ensure that the sample possess the essential characteristics of the Lot/Batch.

3.16 Simple Random Sampling — Sampling where a sample of n sampling units is taken from a population in such a way that all the possible combinations of n sampling units have the same probability of being taken.

3.17 Test Sample — A smaller sample prepared in a specified manner by subdivision of the gross sample. It has the essential characteristics of the gross sample.

4 CLASSIFICATION

For purposes of this standard, cosmetics shall be classified under four main groups, namely, solids, semi-solids, liquids and aerosols. They shall be further subdivided as indicated in Table 1.

5 GENERAL REQUIREMENTS OF SAMPLING

5.1 In drawing, preparing, storing and handling samples, the following precautions and directions shall be observed.

5.1.1 Samples shall be taken in a protected place not exposed to damp air, dust or soot.

5.1.2 The sampling instrument shall be clean and dry.

5.1.3 The samples, the material being sampled, the sampling instrument and the containers for samples shall be protected from adventitious contamination.

5.1.4 The samples shall be placed in clean and dry container of material of construction (MOC) Glass, HDPE or other suitable and compatible material. The sample containers shall be of a size such that they are almost completely filled by the sample.

5.1.5 Each container shall be sealed air tight after filling and properly labelled with appropriate details, such as sample type, name of material, identification code, batch/lot number, quantity, date of sampling, storage conditions, handling precautions (as applicable). In case of sensitive material like hygroscopic material proper precautions shall be taken to avoid deterioration of the sample due to environmental factors.

5.1.6 The samples shall be stored in such a. manner that the temperature of the material does not vary unduly from the normal temperature and they are protected from light.

5.1.7 Sampling shall be done by a person agreed to between the purchaser and the supplier, and in the presence of the purchaser or his representative and the supplier or his representative.

5.1.8 The sampler needs to be adequately trained in the practical aspects of sampling, qualified to perform the sampling operation, and should have sufficient knowledge of substances to allow sampler to execute the work effectively and safely. The sampling technique itself can introduce bias, it is important that personnel carrying out the sampling should be suitably trained in the techniques and procedures used. Examples of sampling devices is also given in Annex A.

Table 1 Classification of Cosmetics

(*Clause* 4)

Main Group (1)	Sub-Croup (2)	Typical Examples (3)
Solids	Powders	Skin powders, face powders, Kum Kum powders, tooth powders and Surma
	Sticks or cakes	Compressed make-ups, hair dyes, lipsticks and salves, and solid dentifrices
Semi-solids	Thick emulsions	Depilatories, face creams, hair creams and dressings
	Pastes (solid/liquid dispersions)	Kajal, liquid make-ups, shaving creams and tooth pastes
Liquids	Homogeneous liquids	After-shave lotions, eye lotions, hair oils and tonics, liquid brilliiantines, nail polishes and varnishes, shampoos and perfumes
	Thin emulsions	Face and hand lotions, hair darkeners and dressings and Bindi
Aerosol	Propellent Based aerosol or Water based aerosol	Spray-on antiperspirants, Shaving gels and foams, deodorants

6 SAMPLING DURING MANUFACTURE

6.1 General

The sampling procedure at the point of manufacture shall consist essentially in drawing samples of the finished product in bulk stage from the top, middle and bottom portions of the process vessel immediately prior to packing .

6.2 Scale of Sampling

In case of solid units such as sticks and cakes, at least three units shall be selected at random (*see* 7.**3.1**). In case of non-solids, at least three samples shall be drawn using appropriate sampling instruments (*see* **6.3**), preferably taking the same number of samples from the top, middle and bottom portions of the batch.

6.3 Sampling Instruments

Instruments of the types described below may be used for drawing samples of different cosmetics. Also details of common Sampling Instruments are given in Annex A for reference.

6.3.1 *For Powders*

For drawing samples of powders, a sampling tube, commonly known as a 'thief' shall be used (*see* Fig. 1). This usually consists of two closely fitting, concentric tubes with matching slots that are closed by rotating the tubes with respect to each other. The 'thief' with the slots closed, is inserted to the desired depth in a given process vessel. The slots are then opened, and the material flows through the open slots to fill the tube. The slots are then closed and the 'thief' is withdrawn.

6.3.2 *For Thick Emulsions, Pastes and Gels*

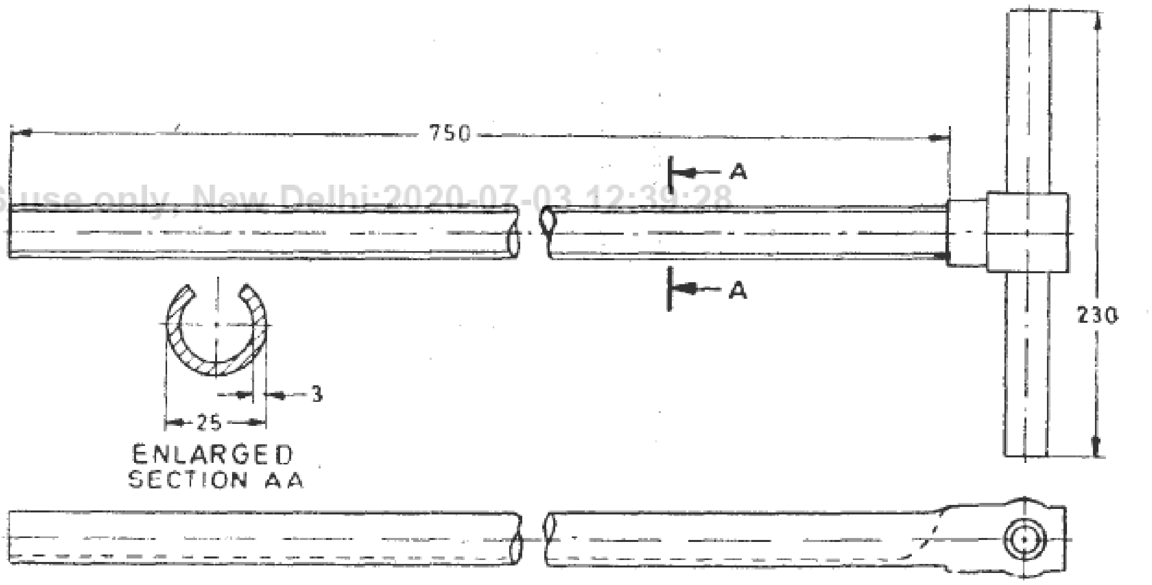
For drawing samples of these emulsions, products, a sampling instrument similar to that described under **6.3.1** may be used. However, the top end of the sampling tube should be connected to a suction device.

6.3.3 *For Homogeneous Liquids and Thin Emulsions*

For drawing samples of these products, a simple device (*see* Fig. 2) may be used consisting of a small bottle and a two-hole stopper, one hole being fitted with a short glass tube and the other with a glass tube slightly longer than the depth of the vessel. To the longer tube is attached a stop-cock which is kept closed while the bottle is lowered to the desired depth in a given process vessel. The stop-cock is then opened and, as the air escapes through the longer tube, the product enters the bottle and fills it. An alternative sampling device (*see* Fig. 3) consists of a tube fitted with a stopper at the lower end which can be closed by means of an attached rod that extends above the upper end of the, tube. With the stopper disengaged, the tube is lowered slowly into the vessel so that the liquid enters it with minimum disturbance. When the bottom of the vessel has been reached, the lower end of the tube is closed with the stopper and the tube is removed.

6.4 Preparation of Samples

The material of all the samples drawn from the batch according to **6.2** shall be disintegrated, if necessary, and mixed thoroughly to give the composite sample at the point of manufacture. The material so chosen shall be in a quantity about 3 times the material required for carrying out a complete series of tests for all the requirements of the specification.

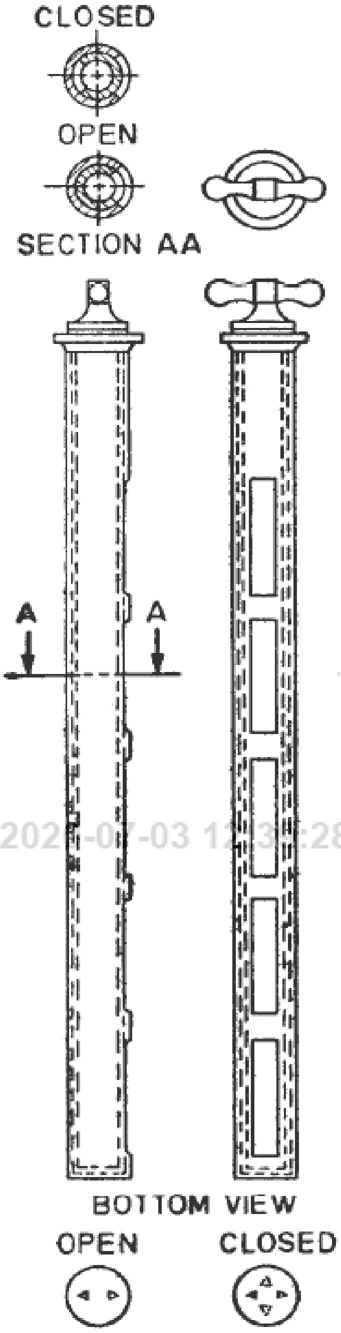


IS use only, New Delhi:2020-07-03 12:39:28

All dimesnsions in millimetres

1A Single Compartment

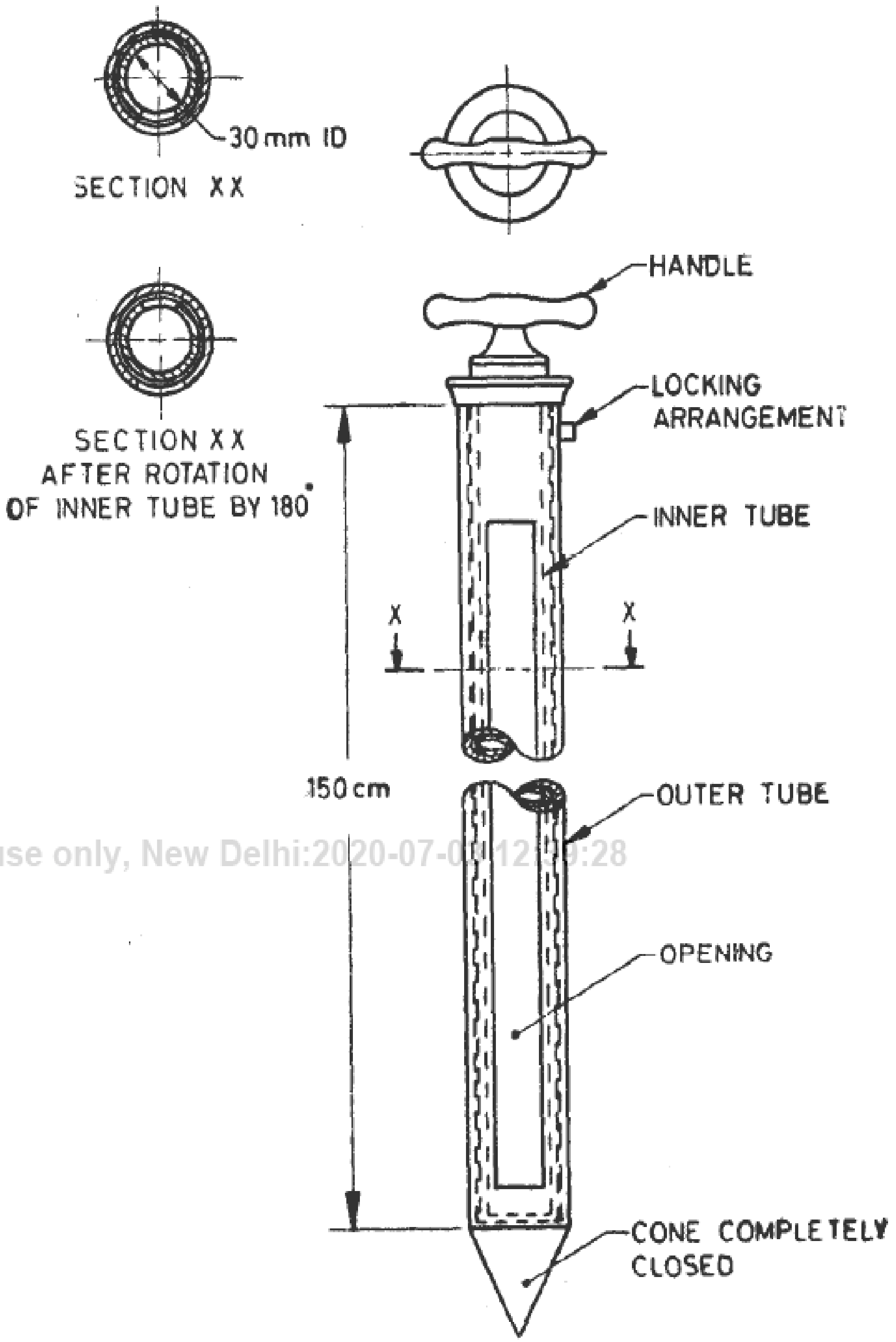
Fig. 1 Closed-End Sampling Tube (Spear), Undivided (*Continued*)



S use only, New Delhi:2021-07-03 12:39:28

1B Multi Compartment

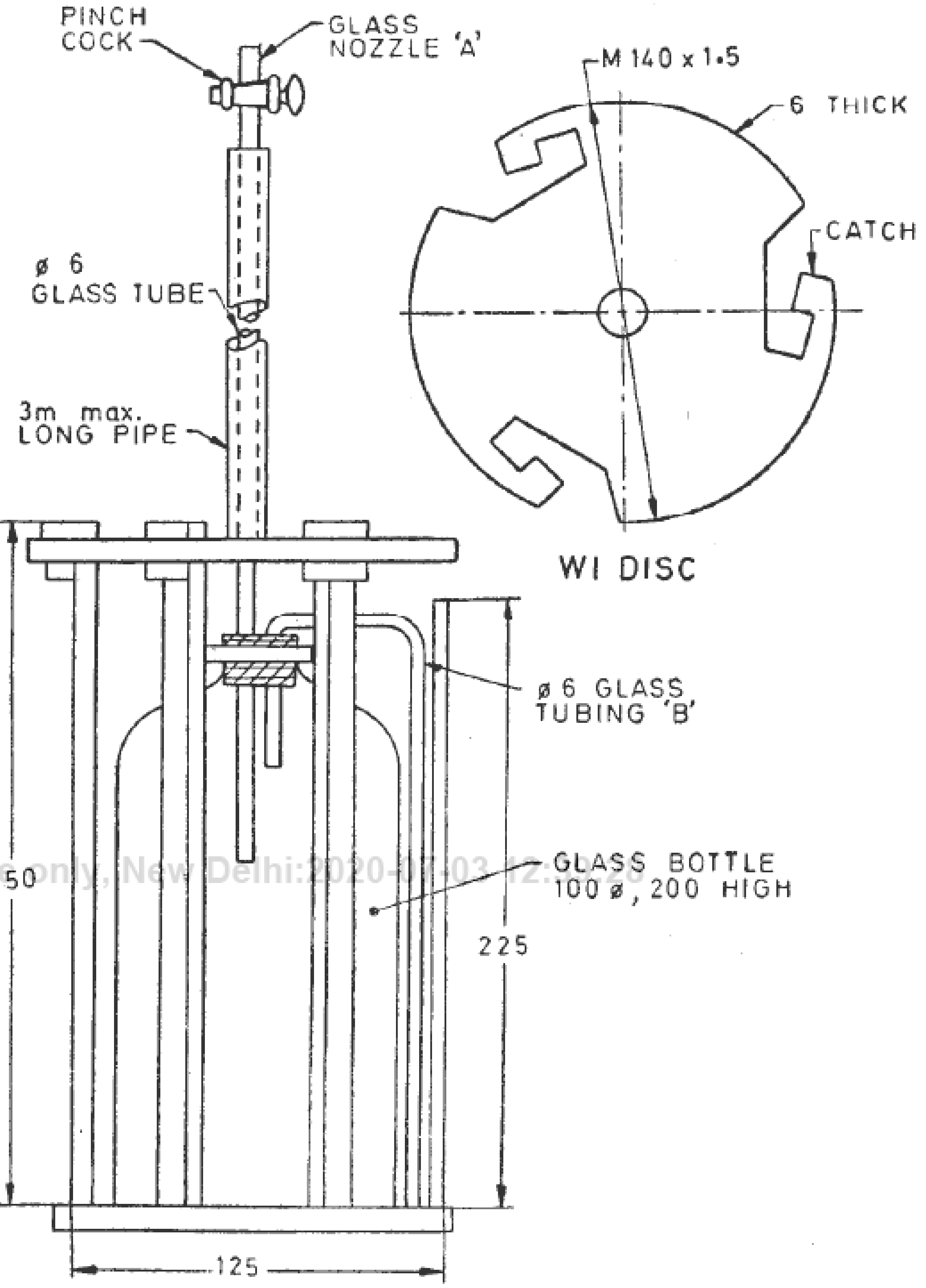
Fig 1 Closed-End Sampling Tube (Spear), Undivided (*Continued*)



use only, New Delhi:2020-07-08 12:39:28

1C Single Compartment

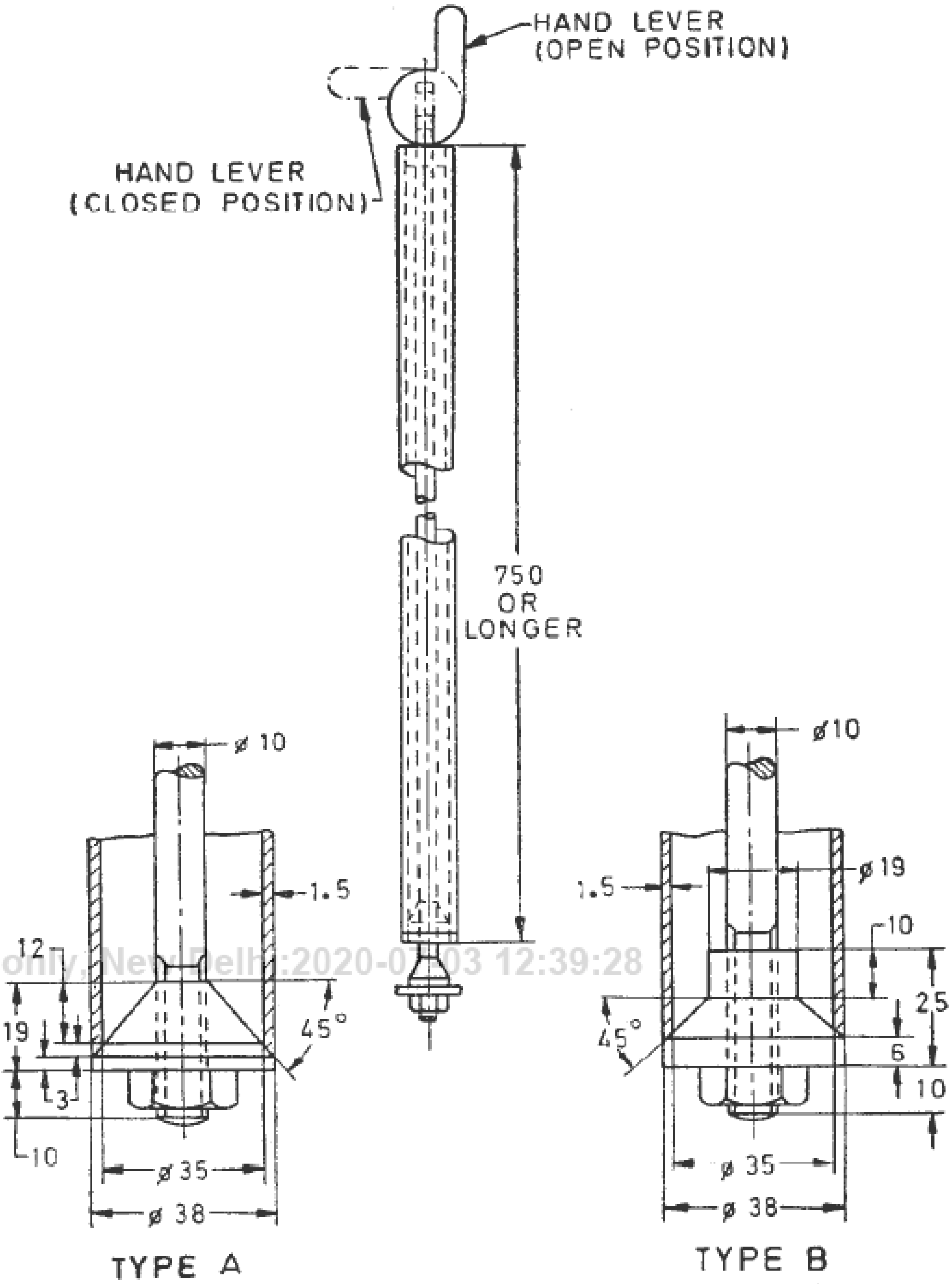
Fig 1 Closed-End Sampling Tube (Spear), Undivided (*Concluded*)



3IS use only, New Delhi:2020-07-03 12:39:26

All dimesnsions in millimetres

FIG. 2 DIPPER BOTTLE



se only, New Delhi :2020-07-03 12:39:28

FIG. 3 BOTTOM-VALVED SAMPLING TUBE

6.5 The composite sample obtained in, **6.4** shall be examined for all the requirements of the specification. The material in the batch shall be passed on for packing, if the composite sample satisfies all the requirements; otherwise not.

7 SAMPLING OF PACKAGES

7.1 General

The sampling procedure for packages shall consist essentially in selecting and drawing a sufficient number of unit packs.

7.2 Lot

In a single consignment, all the packages containing cosmetics of the same type and form, representing the same batch of manufacture, shall constitute a lot. If the consignment consists of packages containing cosmetics of different types or forms or batches of manufacture, then the packages containing products of the same type, form and batch of manufacture shall be grouped together; each group shall constitute a separate lot.

7.3 Scale of Sampling

For ascertaining the conformity of a lot to the requirements prescribed in the specifications for individual cosmetics and toilet goods, tests shall be carried out on each lot separately. The number (*n*) of packages to be selected for drawing the samples shall depend on the size (*N*) of the lot in accordance with Table 2.

Table 2 Scale of Sampling for Packages

No. of Packages in the Lot (*N*) (1)	No. of Packages to be Selected (*n*) (2)
Upto 3	Each container
4 to 50	3
51 to 150	4
151 to 300	5
301 to 500	6
501 and above	7

7.3.1 The packages shall be selected at random (*see* IS 4905) and to ensure randomness of selection, random number tables shall be used.

In case such tables are not available, the following procedure may be adopted:

N units in the population are numbered 1 to N in an order.

Starting from any package, count all the packages in one order as 1,2,3 . . . . up

to r and so on, where r is the integral part of N/n. Every rth package thus counted shall be withdrawn to give a sample for purposes of test'.

7.4 Gross Sample

7.4.1 *For Powders*

From each of the packages selected as in **7.3**, draw at random one or more containers. The material in the containers so chosen from the package shall be about three times the quantity required for carrying out a complete series of tests for all the requirements of the specification. It shall be disintegrated, if necessary, and mixed thoroughly to give a gross sample.

7.4.2 *For Sticks and Cakes*

From each of the packages selected as in 7**.3**, draw at random one or more sticks or cakes. The material so chosen from each package shall be about three times the quantity required for carrying out a complete series of tests for all the requirements of the specification. It shall be disintegrated in a suitable chopper and, after discarding the first and last chippings, the material shall be mixed thoroughly to give a gross sample.

7.4.3 *For Thick Emulsions, Pastes and Gels*

From each of the packages selected as in **7.3** draw at random a suitable number of containers and with the help of a suitable sampling implement, withdraw the material for the preparation of a gross sample. A simple device for withdrawing semi-solid products from jars consists of a glass tube about 1 cm in diameter and fitted with a piston. The piston is pulled out and the tube pressed in the semi-solid product; the tube is then withdrawn, and the sample ejected out of it with the help of the piston. The material so drawn from each package shall be about three times the quantity required for carrying out a complete series of tests for all the requirements of the specification. It shall be mixed thoroughly to give a gross sample.

NOTE — In the case of emulsions and pastes, great care is necessary to ensure that there is no breakdown of the product .

7.4.4 *For Homogeneous Liquids and Thin Emulsions*

From each of the packages selected as in 7**.3**, draw at random a suitable number of containers, shake them thoroughly to ensure homogeneity of the contents and draw samples with the aid of a suitable instrument. The material so drawn from each package shall be about three times the quantity required for carrying out a complete series of tests for all the requirements of the specification. It shall be mixed thoroughly to give a gross sample.

NOTE — In the case of liquid preparations containing alcohol or other volatile ingredients, great care is necessary to ensure that there is no loss on evaporation with resulting change in product make-up.

7.5 Test Samples and Referee Samples

7.5.1 *Composite Sample*

Segregate carefully the gross samples obtained from a lot according to **7.3** and **7.4**. From each of the gross samples drawn from the same lot, take a small but equal portion of material. Mix all these small portions thoroughly into a single composite mass, which should be of a size sufficient to carry out triplicate testing for all the characteristics specified under **7.5.2**. This composite mass representing the lot shall be divided into three equal parts, each forming a composite sample; one for the purchaser, another for the supplier and the third as the referee sample to be used in case of dispute between the purchaser and the supplier.

7.5.2 *Individual Samples*

The remaining portion of material in each gross sample shall be divided into three equal parts, each forming an individual sample. One individual sample from each gross sample in the lot shall be taken to constitute a set of individual samples. One set of individual samples shall be for the purchaser, another for the supplier and the third as the referee sample to be used in case of dispute between the purchaser and the supplier.

7.5.3 All the composite and individual samples shall be transferred to separate containers. These containers shall then be sealed air-tight with stoppers and labelled with full particulars of identification.

7.5.4 *Referee Samples*

The referee samples shall consist of a composite sample and a set of individual samples. All the containers of referee samples shall bear the seals of both the purchaser and the supplier and shall be kept at a place agreed to between the two parties.

7.6 Number of Tests

7.6.1 Tests for the determination of important characteristics, as specified in relevant specification for the individual materials, shall be conducted separately on each of the individual samples.

7.6.2 Tests for the determination of the other characteristics prescribed shall be conducted on the composite sample.

7.7 Criteria for Conformity

7.7.1 *For Individual Samples*

For each of the characteristics which has been determined on the individual samples, the mean and range R of test results shall be calculated as follows:

$$\text{Mean}\left(\bar{x}\right) = \frac{\text{sum of test results}}{\text{Number of Test results}}$$

Difference between the maximum and minimum value of the test results.

7.7.1.1 If the specification limit for the characteristics is given as a minimum, then the value of the expression ($\bar{x}$ -KR) shall be calculated from the relevant test results (*see* **7.6.1.4**). If the value so obtained is greater than or equal to the minimum limit, the lot shall be declared as conforming to the requirement for that characteristic.

7.7.1.2 If the specification limit for the characteristic is given as a maximum, then the value of the expression ($\bar{x}$ +KR) shall be calculated from the relevant test results (*see* **7.6.1.4**). If the value so obtained is less than or equal to the maximum limit, the lot shall be declared as conforming to the requirement for that characteristic.

7.7.1.3 If the characteristic has two-sided specification limit, then the values of the expression ($\bar{x}$ ± KR) shall be calculated from the relevant test results (*see* **7.6.1.4**). If the values so obtained lie between the two specification limits, the lot shall be declared as conforming to the requirement for that characteristic.

7.7.1.4 The value of the factor K referred to in **7.5.1.1** to **7.5.1.3** shall be chosen in accordance with Table 3 depending upon the acceptable quality level.

Table 3 Values of K for Different Acceptable Quality Level

(*Clause* 7.7.1.4)

Acceptable Quality Level (1)	Value of K (2)
Up to 1 percent	0.6
Over 1 percent and up to 2 percent	0.5
Over 2 percent and up to 4 percent	0.4

7.7.2 *For Composite Sample*

For declaring the conformity of the lot to the requirements for all the remaining characteristics determined on the composite sample, the test result for each of the characteristics shall satisfy the relevant requirement specified in the Indian Standard on the subject.

ANNEX A

(*Clause* 5.1.8)

SAMPLING TOOLS

A- 1 SCOOPS

Small containers of solid materials may be adequately sampled using a spatula or scoop. The samples are then blended to provide a representative sample of that container. Figure 1 shows the recommended designs of scoops, which should preferably be rounded. If the scoop used is too small for the sizes of particle being sampled, large particles will roll off and testing bias may be introduced. On the other hand, if the scoop is too big, an unnecessarily large sample will be obtained for a given number of increments. A scoopful of sample should be taken in a single movement and transferred to the sample container. Avoid tapping the scoop to remove cosmetic product as this is likely to cause segregation of the sample.

A-2 DIP TUBES

Dip tubes should be used for sampling liquid and topical products and should be made of an inert material, such as polypropylene or stainless steel. A typical dip tube is shown in Fig. 2.

A-3 WEIGHTED CONTAINERS

For taking samples from large tanks and storage vessels, a container in a weighted carrier can be used. The container is designed such that it can be opened at the required depth. Marks on the cord used for lowering the container can be used to determine when the correct sampling depth has been reached. A typical weighted container is shown in Fig. 3.

A-4 THIEVES

Sample thieves should be used when taking samples from deep containers of solids. Typical thieves are shown in Fig. 4. The plug thief typically consists of a hollow tube with an inner rod that has a tip on the end to allow the thief to enter the powder bed in the closed position (*see* Fig. 4.i). The geometry of this tip can influence the sample taken; pointed tips distort the powder bed less than blunt-tipped probes, thereby reducing sampling error. Some thieves have a locking device that allows the sample volume to be set to the required sample weight, thereby reducing the weight variation in the sample population. A chamber thief generally consists of two concentric tubes (*see* Fig. 4.ii); the inner tube is solid except for the chambers in which the sample is collected. The outer tube is hollow with openings that can be aligned with the chambers in the inner tube. A well-designed thief will have a sharp end to minimize disruption to the powder bed. When it is inserted into a static powder blend a thief will distort the bed by carrying cosmetic product from the upper layers of the blend to the lower layers. The magnitude of this distortion can depend on whether the thief is inserted into the blend with a smooth, jerky or twisting action. Therefore, the correct sampling procedure should be defined and staff trained in using the appropriate technique. Thieves are also sometimes referred to as “double-tube spears”. The angle at which the thief enters the powder bed can also influence sampling error. If a thief is inserted into the powder bed vertically, it can extract samples of different particle size from those that would be obtained using the same thief inserted at an acute angle. In addition the orientation of a chamber thief in relation to the powder bed (that is, whether the chamber is at the top, the bottom or in the middle of the thief) may also influence the sampling error. The material from which the thief is constructed, stainless steel or polypropylene, may also have an effect on sampling error due to static effects. Sampling error can also be affected by bed depth, as the static pressure of the bulk blend forces the material into the sample chamber(s). This pressure is far greater at the bottom of a large container than it is in the middle or at the top. It is quite possible that the same thief could extract samples of different particle size from the top or bottom of a static powder blend.

A-5 SIMPLE BAG-SAMPLING SPEARS

Simple bag-sampling spears are the most commonly used instruments for taking samples from bags, because they are relatively cheap, simple and quick. Sampling spears generally have a maximum external diameter of about 12 mm, but can be up to 25 mm in diameter. To obtain a good cross-sectional sample, the spear should be 40–45 cm in length. The tapered type of sampling spear penetrates bags easily. Typical spears are shown in Fig. 5.

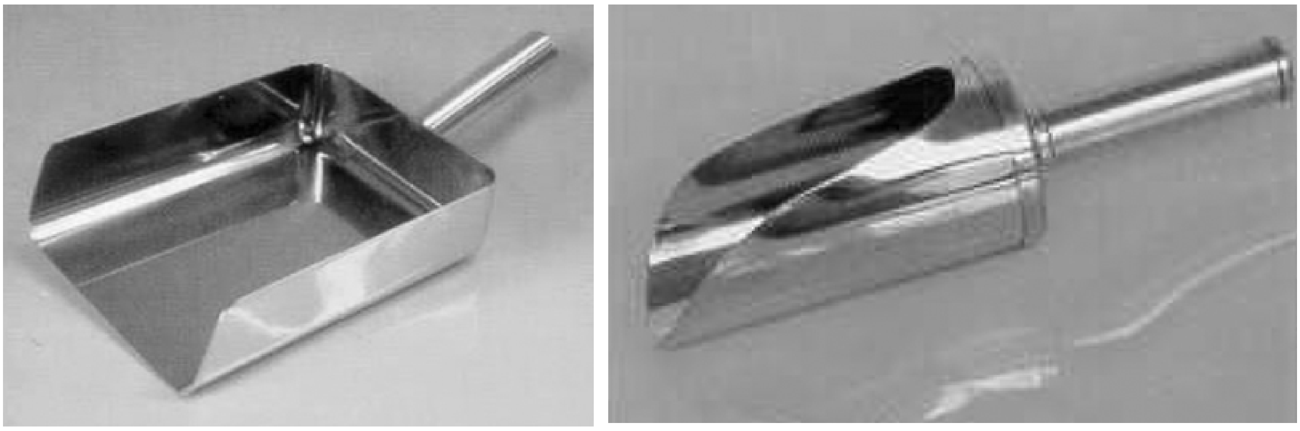


FIG. 1 SAMPLING SCOOPS FOR SOLIDS

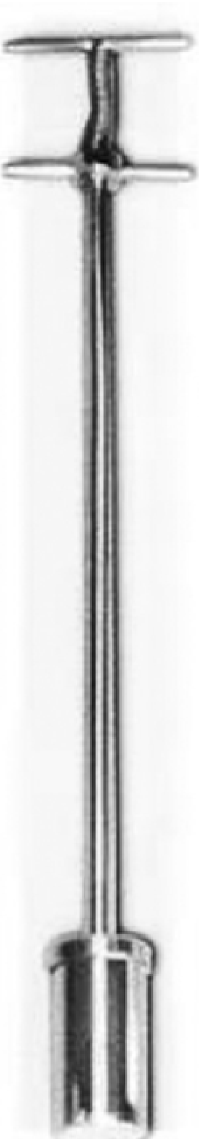


FIG. 2 TYPICAL DIP TUBE

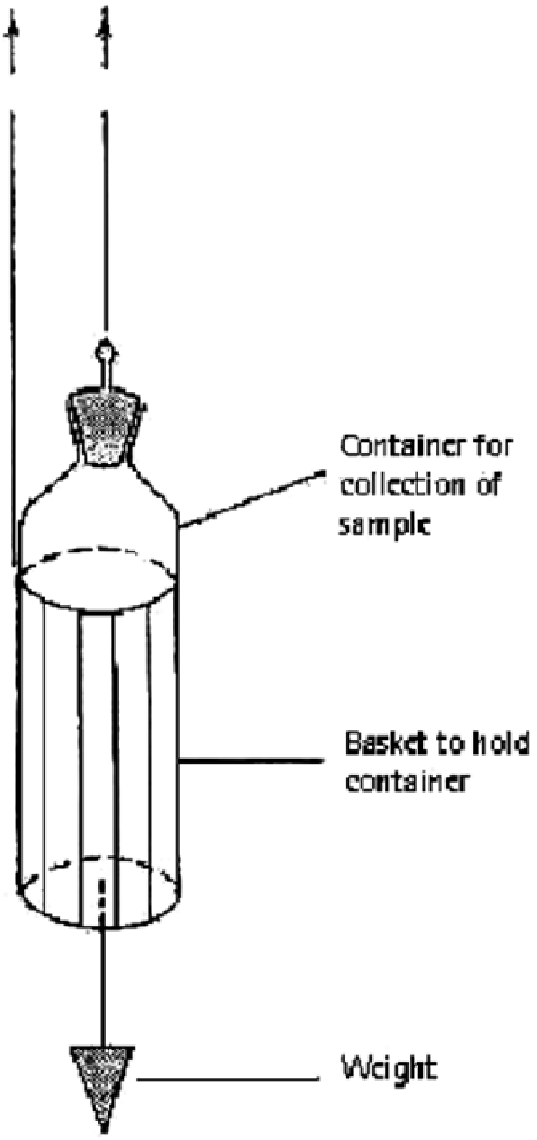


FIG. 3 TYPICAL WEIGHTED CONTAINER

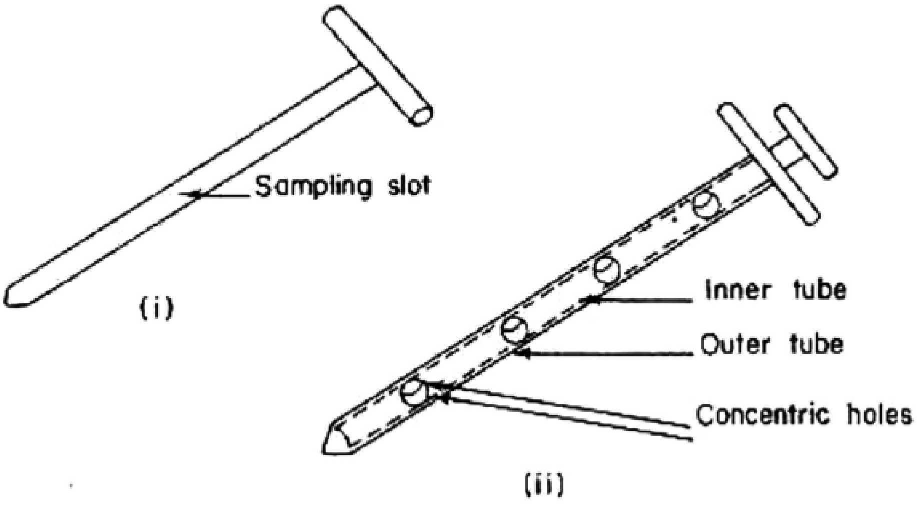
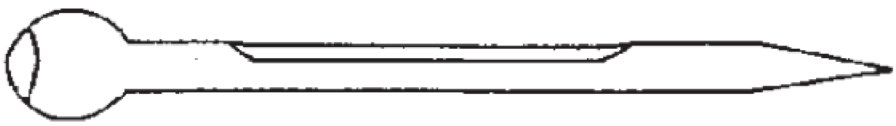
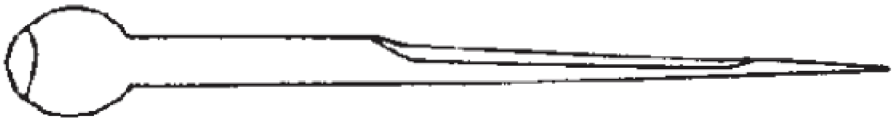


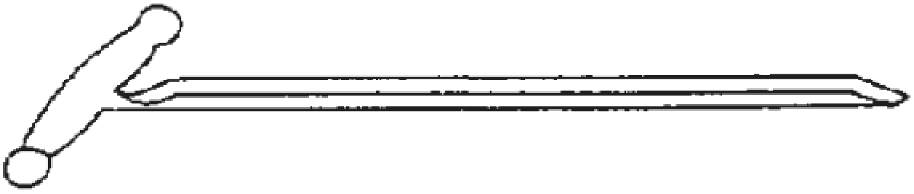
FIG. 4 TYPICAL SAMPLE THIEVES



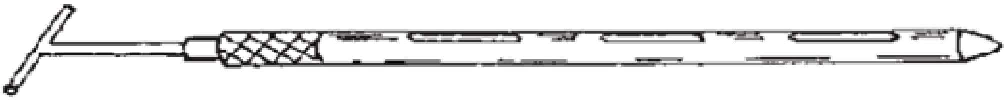
A : Closed spear for sampling



B : Closed spear for sampling



C: Open spear



D: Double-tube spear

FIG. 5 TYPICAL SAMPLING SPEARS

ANNEX B

(*Foreword*)

COMMITTEE COMPOSITION

Cosmetics Sectional Committee, PCD 19

Organization	*Representative(s)*
Drugs Controller General (INDIA), Delhi	Dr V. G. Somani (***Chairman***)
All India Cosmetic Manufacturers Association, Mumbai	Ms Kajal Anand Dr Virendra V. Chavan (*Alternate*)
Chemstar Limited, Mumbai	Shri Sunil Joshi
Cavinkare Private Limited, Chennai	Dr T. Kumar Dr Gireesh Kumar (*Alternate* I) Dr S. Sankar Kalidas (*Alternate* II)
Central Drugs Standard Control Organization (CDSCO), Delhi	Dr S. P. Shani
Central Drugs Testing Laboratory (CDTL), Chennai	Ms C. Vijaya Lakshmi Dr J. Uma Maheswari (*Alternate*)
Consumer Voice, New Delhi	Shri H. Wadhwa
CSIR Indian Institute of Toxicological Research, Lucknow	Dr A. B. Pant Dr R. S. Ray (*Alternate*)
Central Drugs Testing Laboratory (CDTL), Mumbai	Dr Raman Mohan Singh Shrimati S. U. Warde (*Alternate* I) Shrimati Sujata S. Kaisare (*Alternate* II)
Colgate Palmolive (India) Limited, Mumbai	Dr Manas V. Vyas Shrimati Shruti Hardikar (*Alternate* I) Shri Purushottam Jadhav (*Alternate* II)
Consumer Guidance Society of India, Mumbai	Dr Sitaram Dixit Dr M. S. Kamath (*Alternate*)
Dabur India Limited, Sahibabad	Dr Prasun Bandyopadhyay Dr S. K. Luthra (*Alternate* I) Shri Shivaji Rai (*Alternate* II)
Directorate of Food and Drugs Administration, Goa	Ms Jyoti J. Sardessai
Drugs Control Department, Delhi	Shri A. K. Nasa Shri K. R. Chawla (*Alternate*)
Envisbe Solutions Pvt Limited, Mumbai	Shri Benedict M. Mascarenhas
Essential Oil Association of India (EOAI), Noida	Shri Ajay K. Jain
Food Safety and Drug Administration, Lucknow	Dr Anita Bhatnagar Jain Shri Dinesh Kumar Tiwari (*Alternate*)
Food and Drugs Control Administration Gujarat, Gandhinagar	Dr H. G. Koshia Shri V. R. Shah (*Alternate*)
Food and Drugs Administration Haryana, Panchkula	Shri Narender Kumar Ahooja Shri Manmohan Taneja (*Alternate*)
Food and Drugs Administration Maharashtra, Mumbai	Shri O. S. Sadhwani
Fragrance and Flavours Association of India, (FAFAI), Mumbai	Shri Hasmukh Patel

Organization	*Representative(s)*
Galaxy Surfactants Limited, Mumbai	Shri R. K. Singh Shri Sagar Trailokya (*Alternate* I) Shri Pramod Sabat Trailokya (*Alternate* II)
Godrej Consumers Products Limited, Mumbai	Ms Rupinder Kaur Rawat Dr Manoj Gaur (*Alternate*)
Hindustan Lever Limited (HUL), Mumbai	Ms Vrinda Rajwade
Hygienic Research Institute Private Limited, Mumbai	Dr Jayashree Anand Shri Manoj Sarkar (*Alternate*)
Indian Pharmacopoeia Commission (IPC), Ghaziabad	Dr Anil Kr Teotia Dr Manoj Kr Pandey (*Alternate*)
ITC R & D Centre, Bengaluru	Dr Gurubasavaraja K. M. Dr James Bhaskar (*Alternate* I) Dr John Bosco Stanislaus (*Alternate* II)
Indian Beauty and Hygiene Association (IBHA), Mumbai	Ms Malathi Narayanan
Johnson and Johnson Limited, Mumbai	Dr Dilip Tripathi Shri Rajneesh Kumar (*Alternate*)
Kelkar Education Trusts (KETS) Scientific Research Centre, Mumbai	Dr S. S. Barve
Loreal India Private Limited, Mumbai	Ms Veena Balgi Ms Rupali Turakhiya (*Alternate*)
Marico Limited, Mumbai	Dr Mitali Hedge Dr Sudhakar Mhaskar (*Alternate* I) Shri Prabodh S. Halde (*Alternate* II)
Mikasa Cosmetics Limited, Ahmedabad	Ms Trupti Patel
Ministry of Micro, Small and Medium Enterprises (MSME), Delhi	Dr Arun Kumar Dr Izzatullah (*Alternate*)
Ministry of AYUSH, Delhi	Dr D. C. Katoch
Procter and Gamble, Mumbai	Shri Girish Parhate
PETA India, Mumbai	Shri Manilal Valliyate Ms Dipti M. Kapoor
The Himalaya Drug Company, Bengaluru	Dr Sundaram Ramachandran Dr Krishnan Sriraman (*Alternate*)
Voluntary Organization In Interest of Consumer Education (VOICE), Delhi	Dr M. A.U. Khan
Bureau of Indian Standards, Jammu	Shrimati Nisha Bura
BIS Directorate General	Shrimati Nagamani T., Scientist 'E' and Head (PCD) [Representing Director General (*Ex-officio*)]

Member Secretary

Shrimati D. Uma
Scientist 'D' (PCD), BIS

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 2016 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc No.: PCD 19 (16033).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.gov.in

Regional Offices:		*Telephones*
Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	2323 7617 2323 3841
Eastern	: 1/14 C.I.T. Scheme VII M, V.I.P. Road, Kankurgachi KOLKATA 700054	2337 8499, 2337 8561 2337 8626, 2337 9120
Northern	: Plot No. 4-A, Sector 27-B, Madhya Marg CHANDIGARH 160019	265 0206 265 0290
Southern	: C.I.T. Campus, IV Cross Road, CHENNAI 600113	2254 1216, 2254 1442 2254 2519, 2254 2315
Western	: Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	2832 9295, 2832 7858 2832 7891, 2832 7892

Branches : AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. COIMBATORE. DEHRADUN. DURGAPUR. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. JAMMU. JAMSHEDPUR. KOCHI. LUCKNOW. NAGPUR. PARWANOO. PATNA. PUNE. RAIPUR. RAJKOT. VISAKHAPATNAM.

Published by BIS, New Delhi